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21 January 1964

**MEMORANDUM FOR:** Chief, Materiel Division, OSA

**SUBJECT:** Request for ARC-34 and 618 T-3 Equipment  
for Destructive Environmental Testing

1. On a visit to  relative to operational use of  equipment, the question of operational procedures during flame-out at altitude was thoroughly discussed. During these discussions, it became evident that loss of pressurization at altitude could cause an arcing problem which could put either the ARC-34, the 618 T-3, or both, completely out of commission.

2. While there has been no known evidence of transmitter failure in the last three IDEALIST aircraft losses, there has been no known effort to determine whether the transmitters were still capable of operation. In summation, it is possible that radio contact to the base had been attempted, but that either power failure or arcing had defeated the attempt.

3. It is requested that a 618 T-3 and an ARC-34 unit, one of each, be made available for destructive environmental testing to determine the operating limits at IDEALIST altitudes under varying pressurization, temperature, and power conditions. Such a test could be conducted at . The data output from the 618 T-3 tests would directly affect the operational procedures to be used relative to  and to voice communications. Similarly, the test data from the ARC-34 would directly affect the operational procedures to be used relative to normal voice communications. Such data are also required to correct inadequacies which may now exist.

4. The term "destructive testing" may be misleading to the extent that the units could be overhauled after test and be placed on the shelf as a supply item. Such tests would normally be more destructive to the high voltage

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power supplies, and transmitter amplifiers than to other portions of the equipments.

5. It would be suggested that the same type of test be conducted for the ARC-50 and G18 T-3 on OXCART.

**SIGNED**

**Chief, Engineering and Analysis Division  
(Special Activities)**

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EAD/OSA: [ ] ccj  
Cys 1 & 2 - MD/OSA  
3 - D/TECH/OSA  
4 - D/FA/OSA  
5 - IDEA/OSA  
6 - COMMO/OSA  
7 - EAD/OSA  
8 - EAD/OSA Chrono  
9 - RE/OSA

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